



AIRS Mission Support from GES DISC

Goddard Earth Sciences Data and Information Services
Center (GES-DISC)

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Sounder Science Team Meeting
April 21-23, 2015



Status Quo

- GES DISC Web Support for AIRS (Table)
 - ☐Status on AIRS L1C, CO₂
 - ☐Status on AIRS V5, V6.
 - ☐Status on AIRS Near Real Time (NRT).
- Metrics for V5/V6 usage/support
- Challenges to user community
 - ☐Multiple Versions
 - ☐L3 temporal information
 - ☐Multiple Browse Services
- Plans for New Services and Collaboration



GES DISC Web Support for AIRS

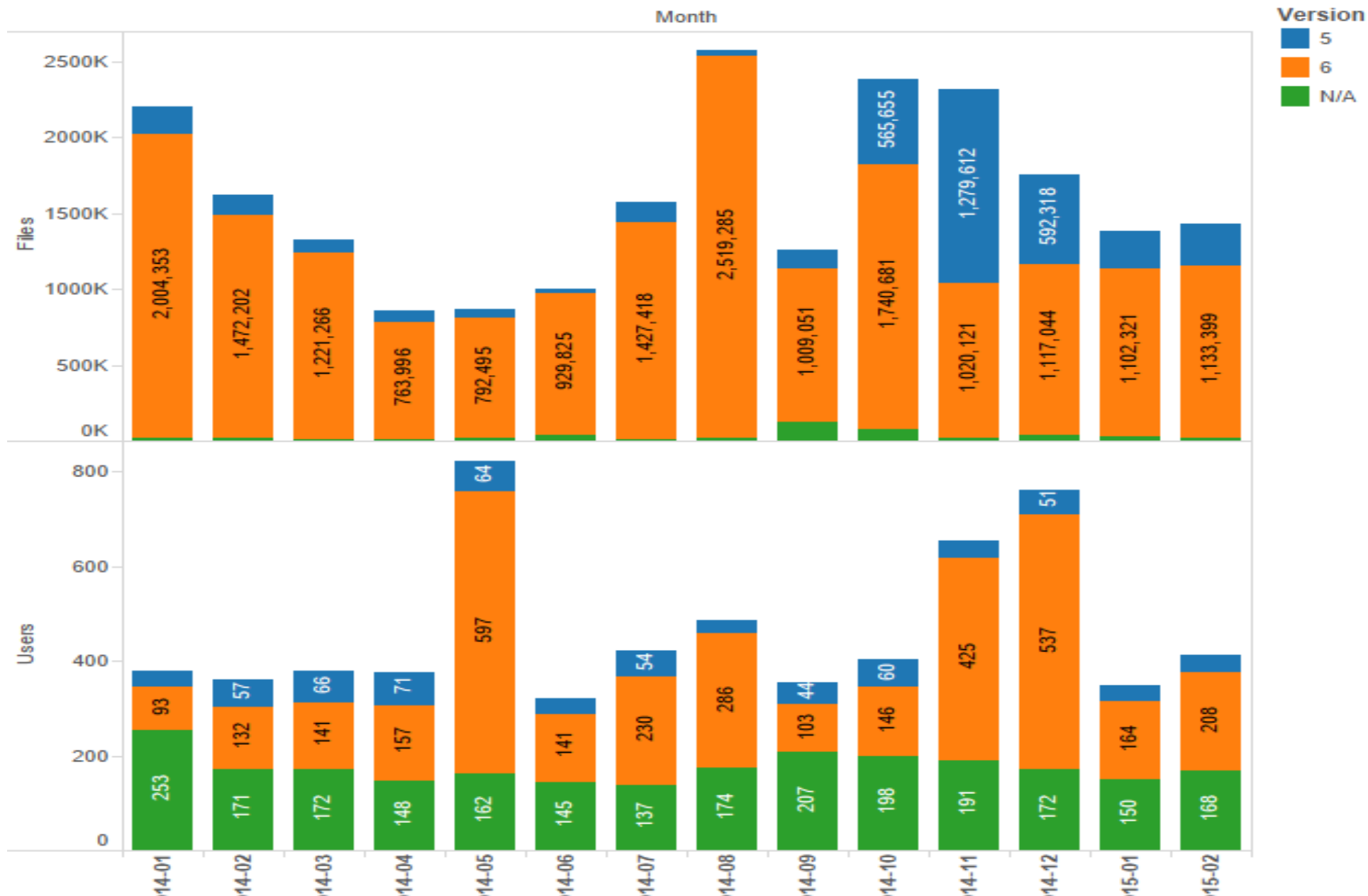
		GCMD	ECHO	GES DISC Web search	Subsetting	OPeNDAP	netCDF	G3*	G4*	WCS/WMS
V5	Level 1	✓	✓	✓	✓	✓	✓			
	Level 2	✓	✓	✓	✓	✓	✓			
	Level 3	✓	✓	✓	✓	✓	✓	✓		✓
	CO ₂	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NRT (L1b)	✓	✓		✓	✓	✓			✓
V6	Level 1c	✓	✓	✓	✓	✓	✓			
	Level 2	✓	✓	✓	✓	✓	✓		✓	
	Level 3	✓	✓	✓	✓	✓	✓		✓	✓
	NRT (L2)	✓	✓		✓	✓	✓			✓

Note: G3: Old Giovanni 3. G4*: Current Giovanni 4



AIRS L2 V5/V6

Metrics for Level 2 V5/V6 Usage





Metrics for Level 3 V5/V6 Usage





Challenges to users

- Multiple Versions
 - ☐ V5 and V6 services
 - ☐ V6 products: STD vs IR-only
 - ☐ V6 L1C usability
 - ☐ Inconsistent V5 CO₂ series
- AIRS L3
 - ☐ Begin Time for Ascending/Descending Grids
 - ☐ Mean Time at a grid cell
 - ☐ L3 usability (TqJ and Regular) → GES DISC “Lite Products”
- Multiple browsing services
 - ☐ GES DISC NRT ImageViewer
 - ☐ Provides images to Global Imagery Browse Services (GIBS)



Challenges to users

- Multiple Versions
 - ❑ V5 and V6 services
 - ❑ V6 products: STD vs IR-only
 - ❑ Inconsistent V5 CO₂ series
 - ❑ V6 L1C usability



Provides V5 and V6 services - Giovanni

<http://giovanni.gsfc.nasa.gov/giovanni/>

#service=INTERACTIVE_MAP&starttime=&endtime=&bbox=-180,-90,180,90&variableFacets=ataProductPlatformInstrument%3AAIRS%3B

Map & Time Series Choices

- ☒ Time Series
- ☐ Seasonal

[Details...](#)

- ☐ Area
- ☐ Map

[Details...](#)

- ☐ U
- ☐ Q

[Details...](#)

- ☐ A
- ☐ A

[Details...](#)

- ☐ D
- ☐ D

[Details...](#)

- ☐ Seasonal
- ☐ Seasonal

[Details...](#)

- ☐ Hovmoller
- ☐ Longitude

[Details...](#)

- ☐ Hovmoller, Latitude-Averaged
- ☐ Latitude-averaged Hovmoller, plotted over the selected time and longitude ranges

[Details...](#)

- ☐ Difference of Area Averages
- ☐ Time series of area averages of differences between two variables at each spatial grid point

[Details...](#)

- ☐ Area-Averaged
- ☐ Time series of area-averaged values

[Details...](#)

Vertical Choices

- ☒ Vertical
- ☐ Plot

[Details...](#)

Miscellaneous Choices

- ☐ Histogram

Distribution of values over time and space

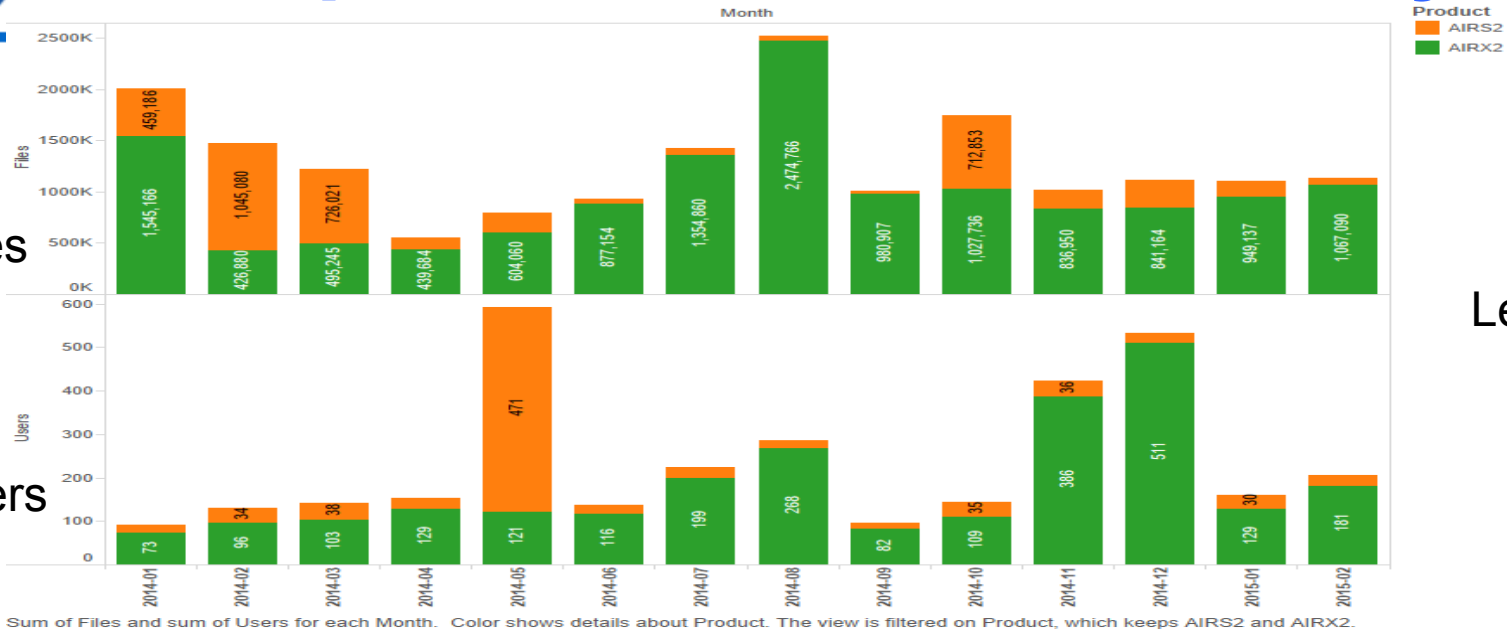
[Details...](#)



V6 products: STD vs IR-only

Files

Users



Level 2

Files

Users

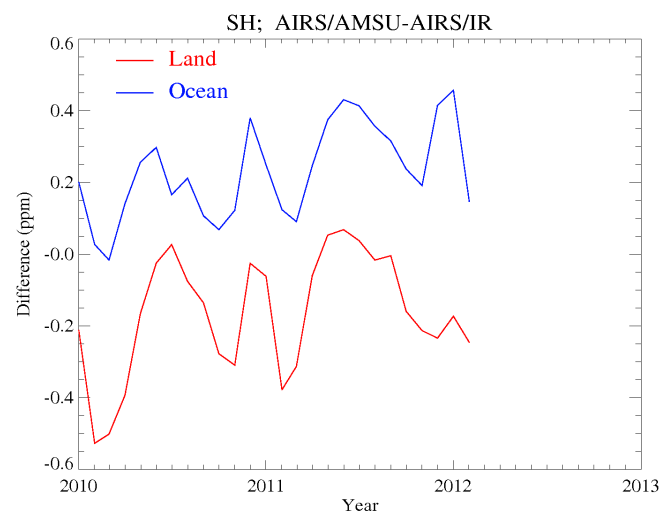
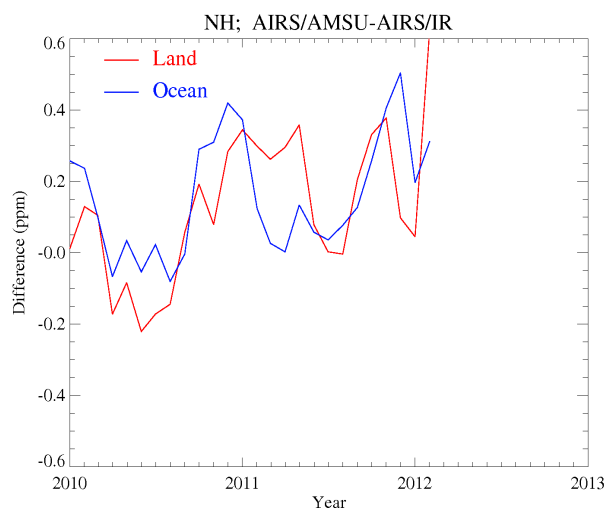
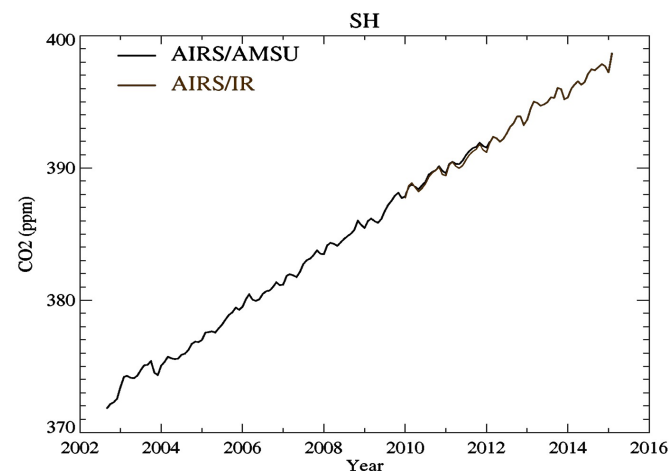
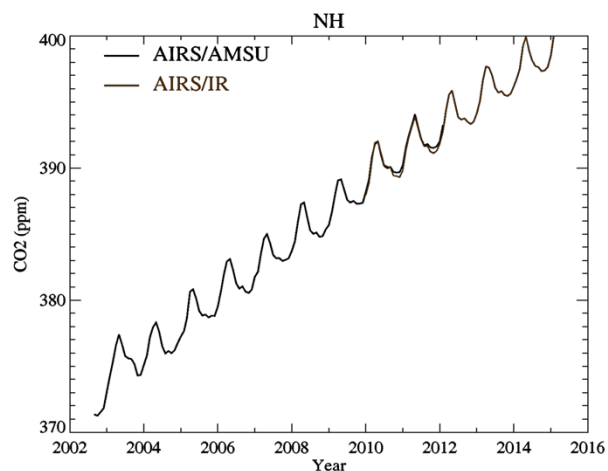


Level 3



Inconsistent V5 CO₂ Collections

- Differences btn AIRS/AMSU vs AIRS/IR are very small. We should have one consistent series instead.



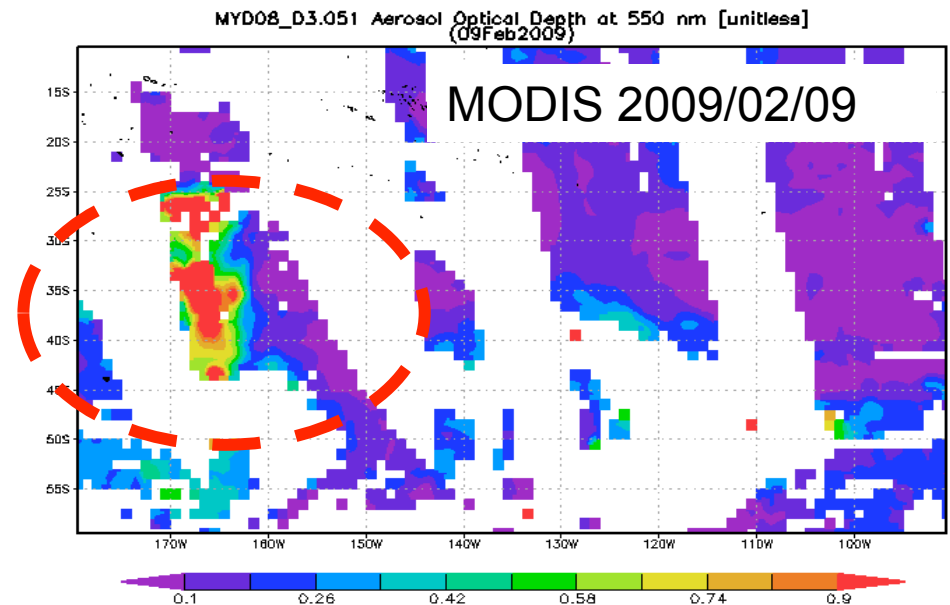
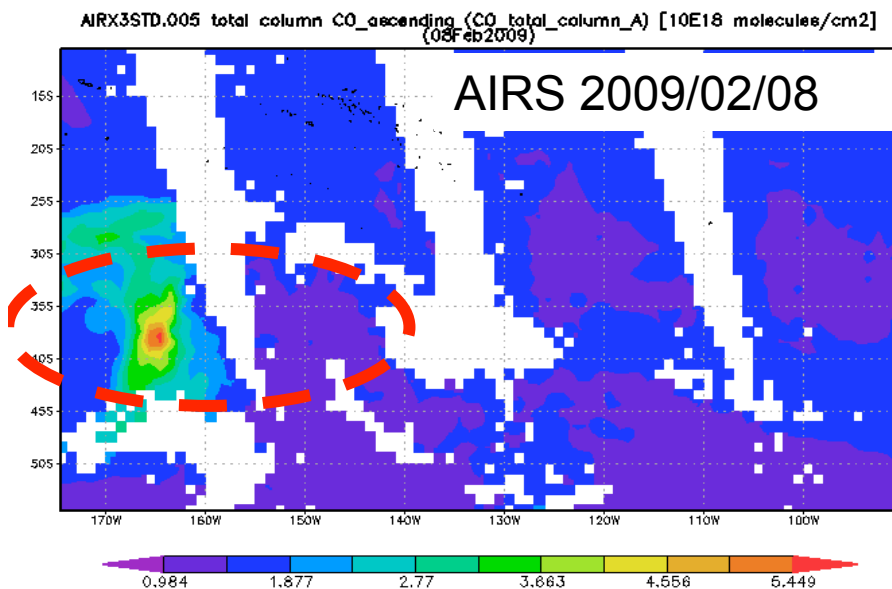
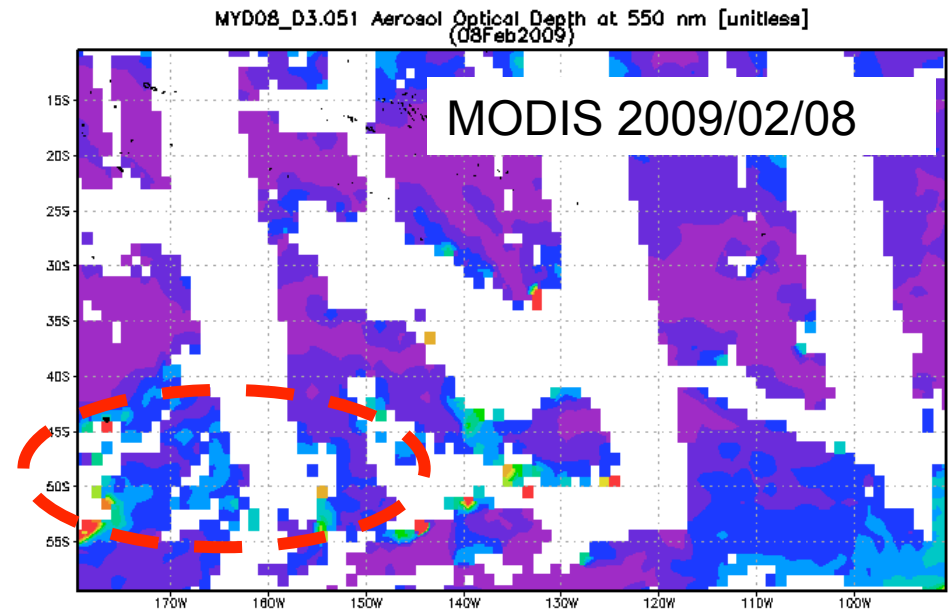
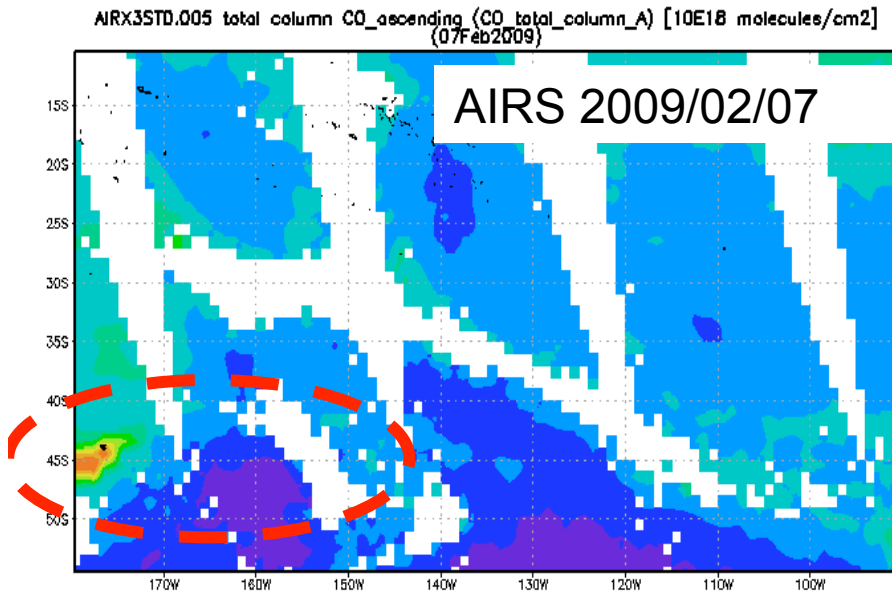


Challenges to users

- AIRS L3
 - ❑ Begin Time for Ascending/Descending Grids
 - ❑ Mean Time at a grid cell
 - ❑ TqJoint vs. STD usability



AIRS L3 Begin Time for Ascending/Descending Grids



L1B Availability
AMSU Granules: 240
HSB Granules: 0
AIRS Granules: 240

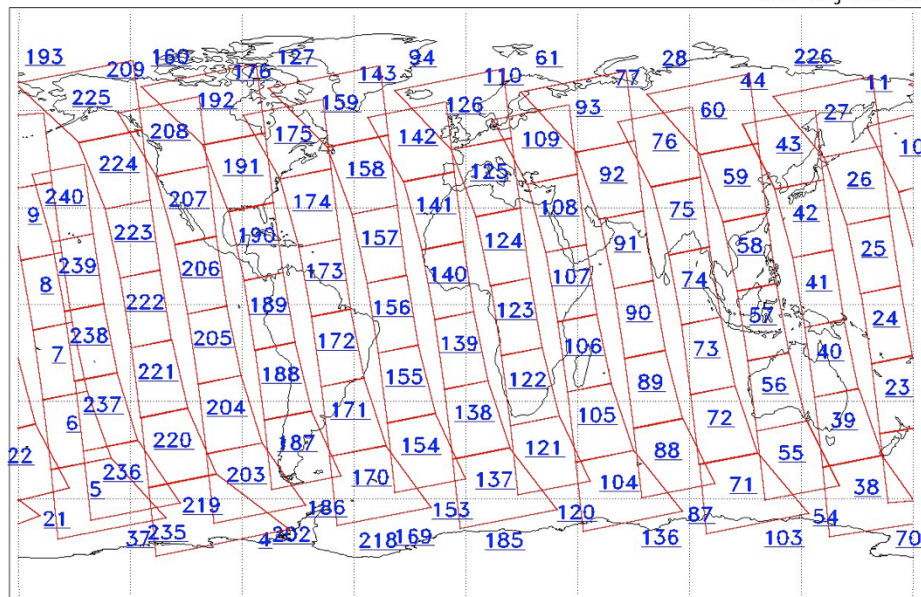
2009/02/08

8 Feb 2009
DoY 39
Aqua Day 2472
Ascending Granules

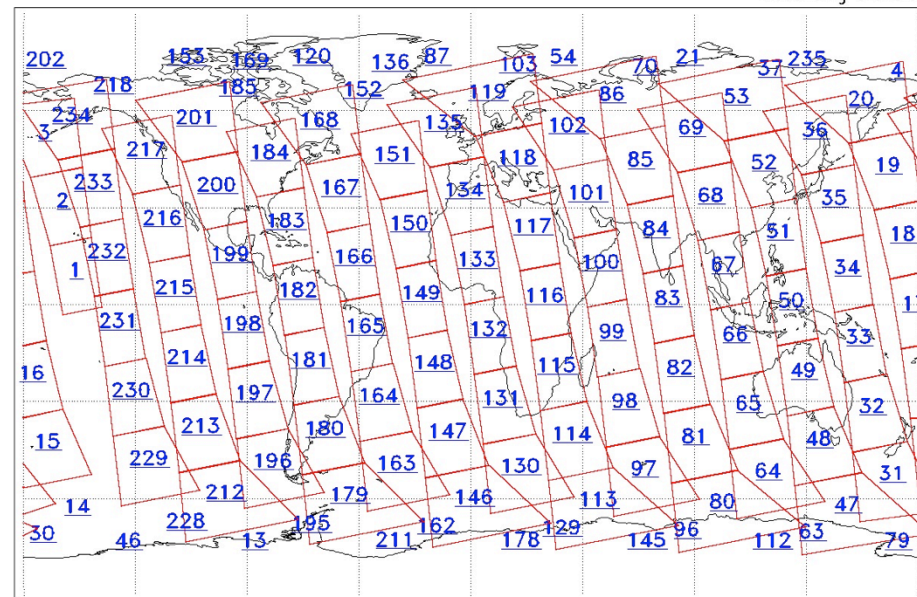
L1B Availability
AMSU Granules: 240
HSB Granules: 0
AIRS Granules: 240

2009/02/07

7 Feb 2009
DoY 38
Aqua Day 2471
Ascending Granules



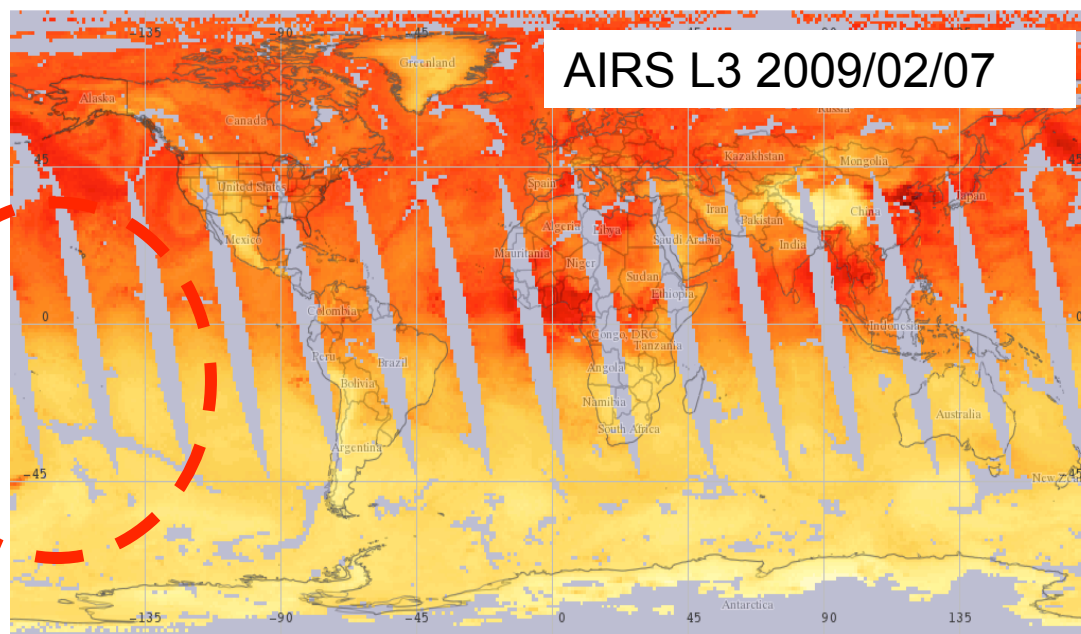
Legend: AMSU Available, HSB Available, AIRS Available



Legend: AMSU Available, HSB Available, AIRS Available

Time Averaged Map of Carbon Monoxide Total Column (Daytime/Ascending) daily 1 deg. [AIRS AIR3S1D v006] mol/cm2
over 2009-02-07 - 2009-02-07, Region 180W, 90S, 180E, 90N

Begin Time
for
Ascending/
Descending
Grids



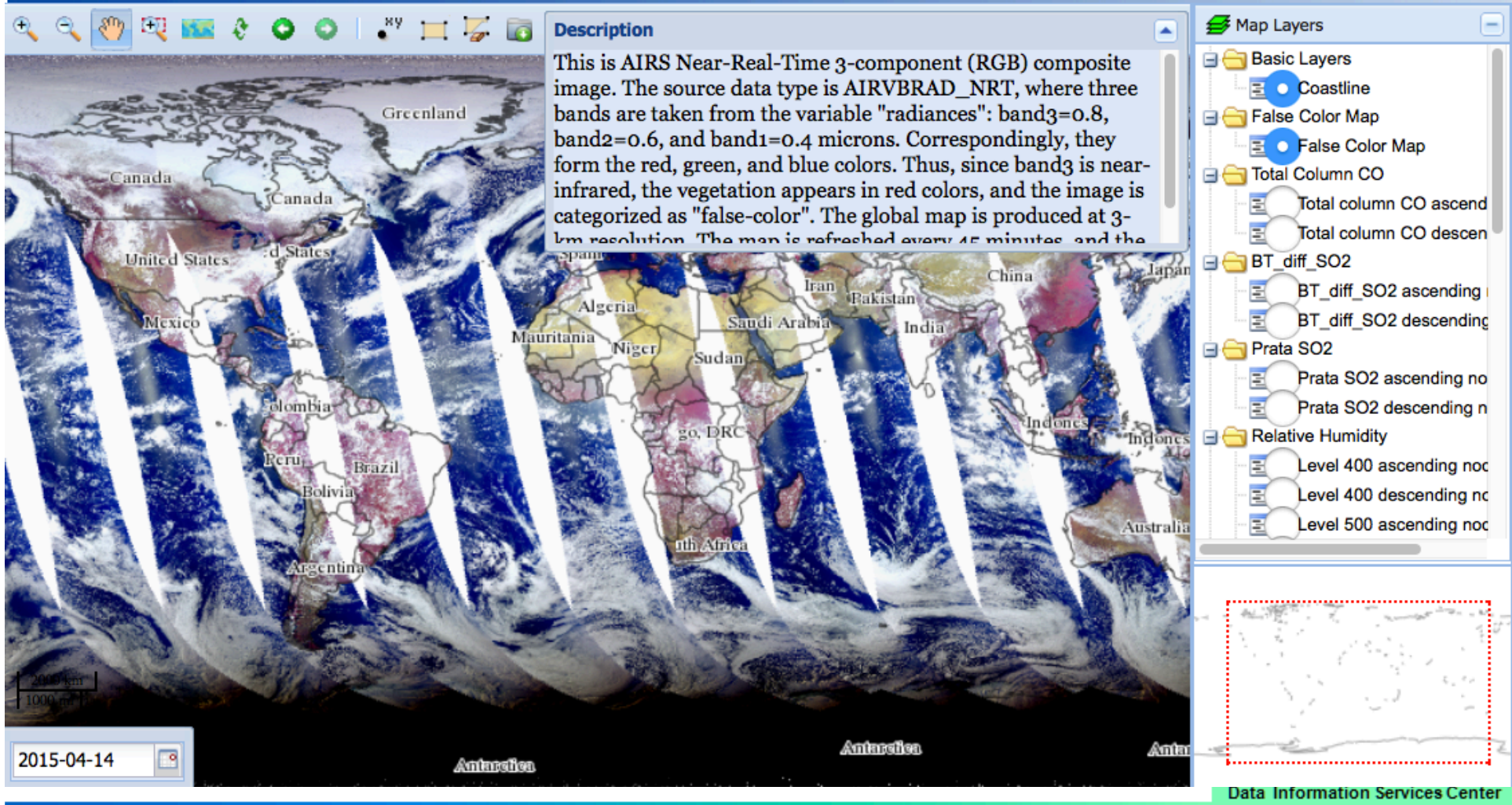
- Selected date range was 2009-02-07 05:00Z - 2009-02-07 05:00Z. Title reflects the date range of the granules that went into making this result.



Image browse service

1. VIS radiances (false color map)
2. CO, Bt_diff_SO2, Prata_SO2
3. Dust score
3. Precipitation
4. Temperature and Relative Humidity at 850hPa, 700hPa, 600hPa, 500hPa, and 400hPa

AIRS Near Real-Time Data Portal

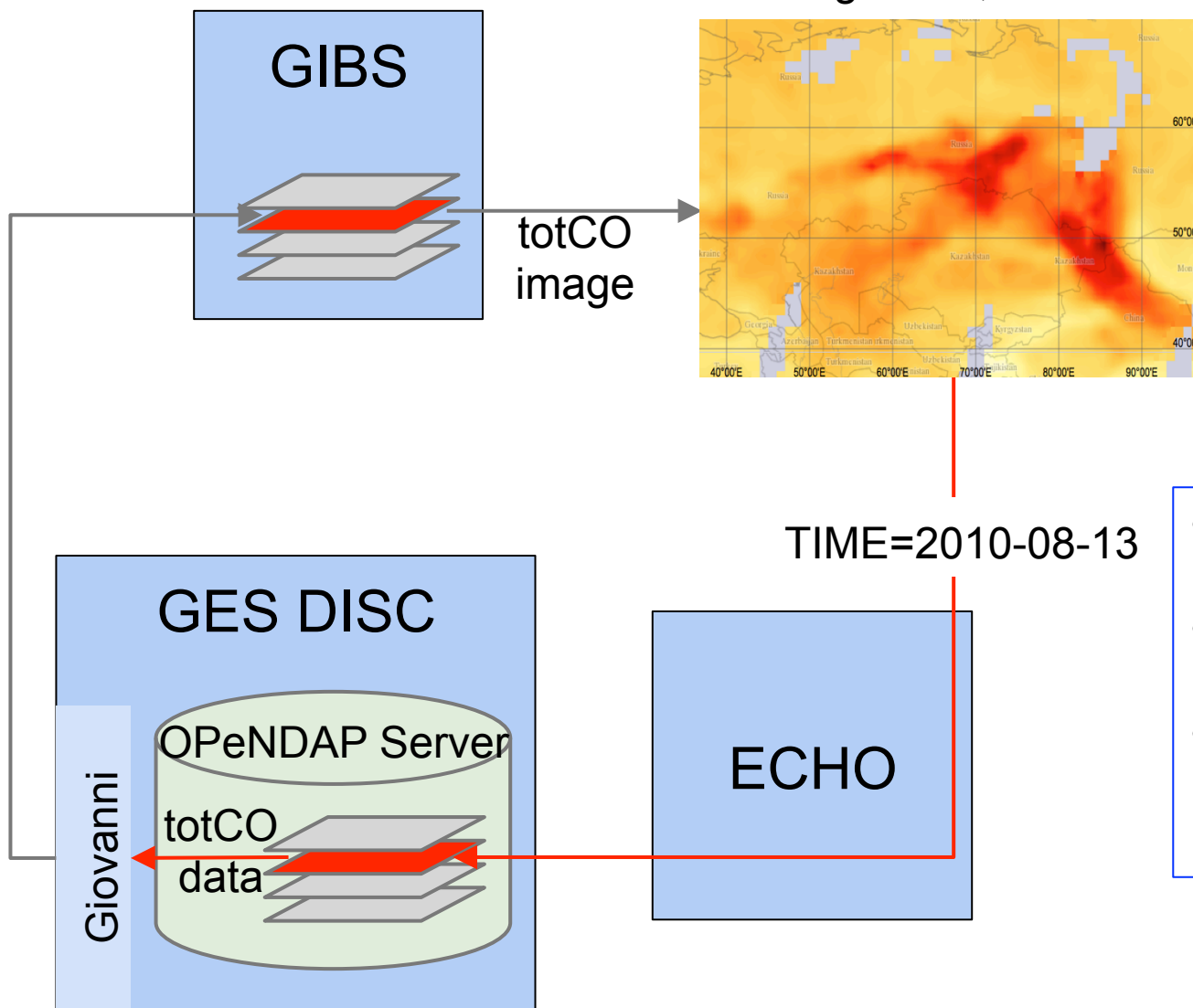




GES DISC Big Earth Data Initiative (BEDI)

GIBS = EOSDIS' Global Imagery Browse Services

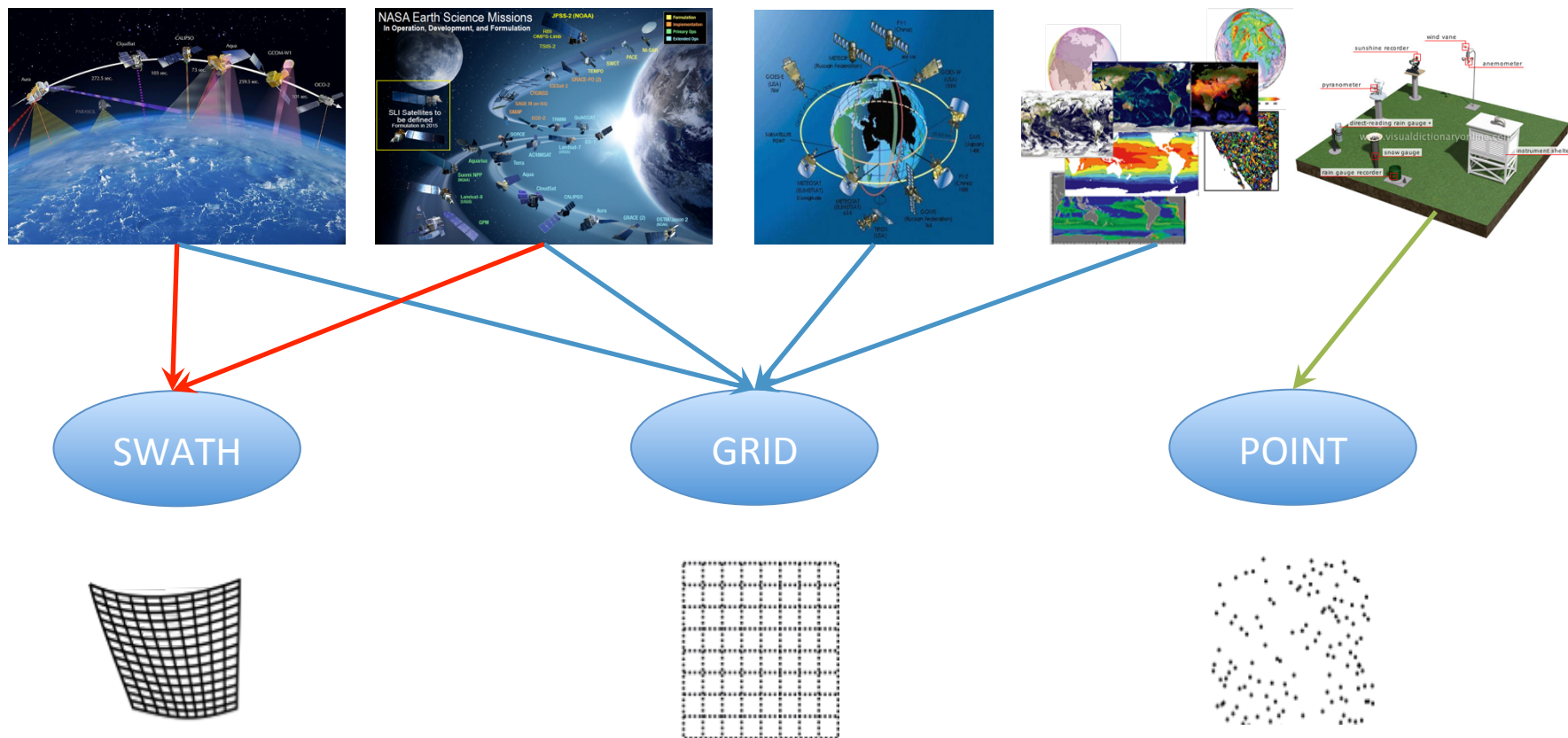
August 13, 2010



- Societal Benefit Areas
- AIRS Level 3 variables
- Maybe one variable from Level 2



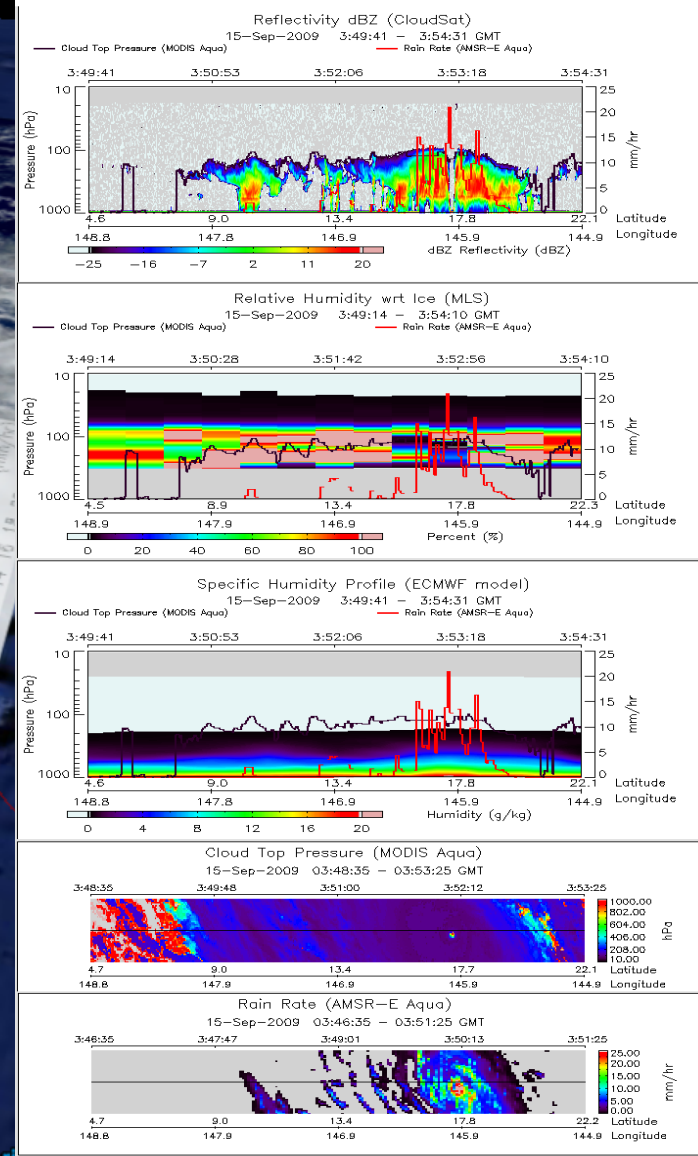
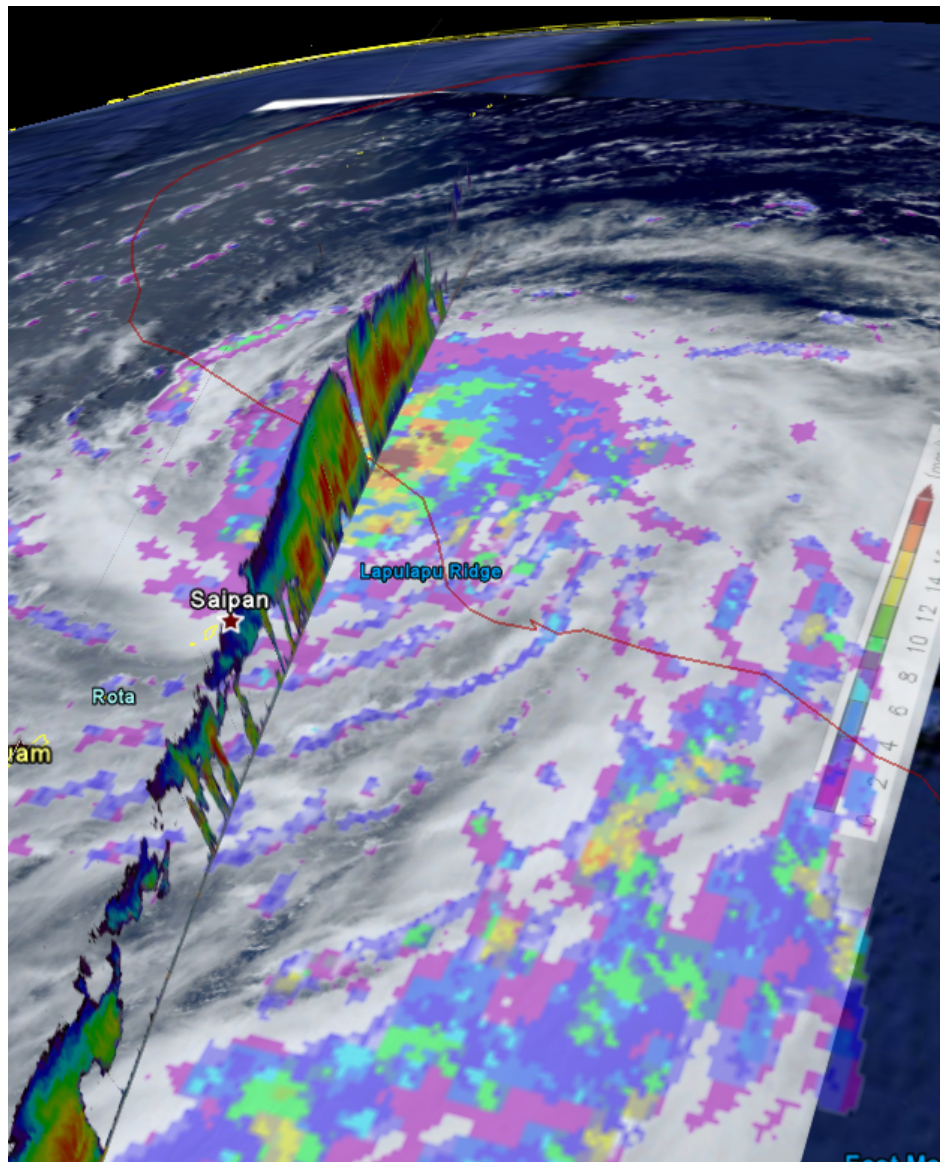
GES DISC Developing Capability



- Multiple measurements
- Different shapes
- Tools developed for the user community

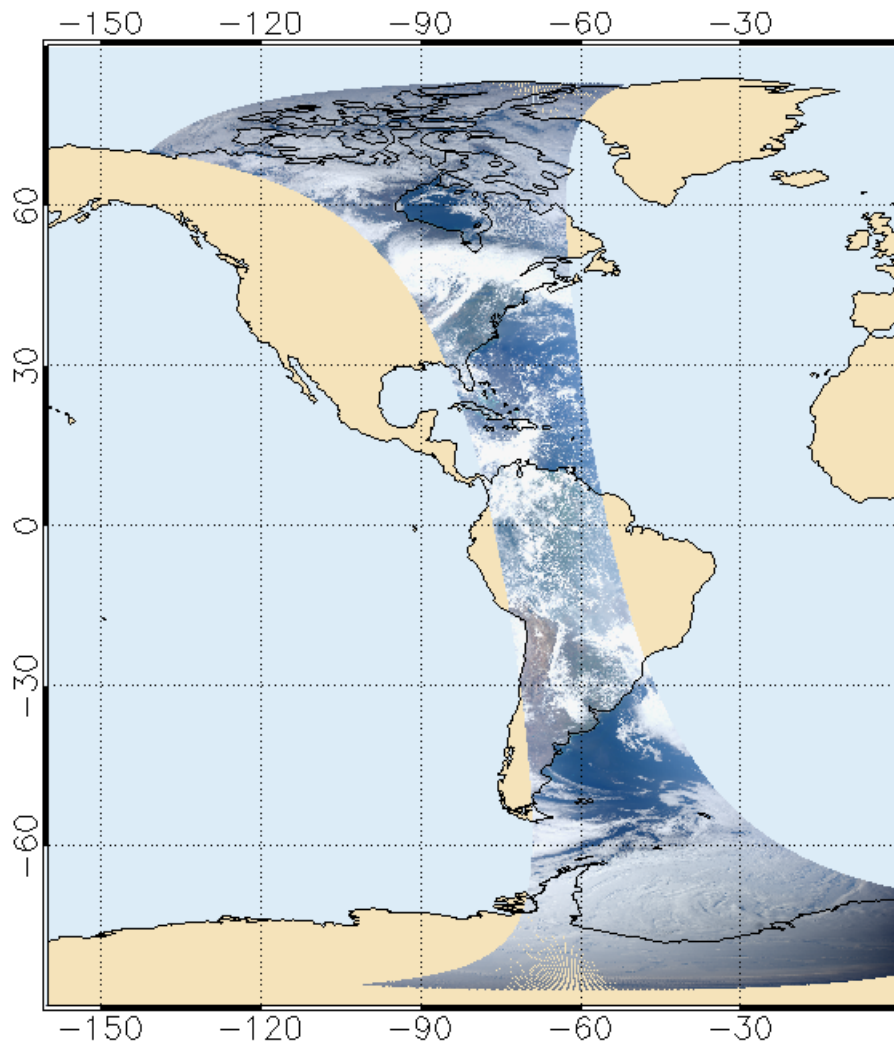


GES DISC A-Train Data Depot

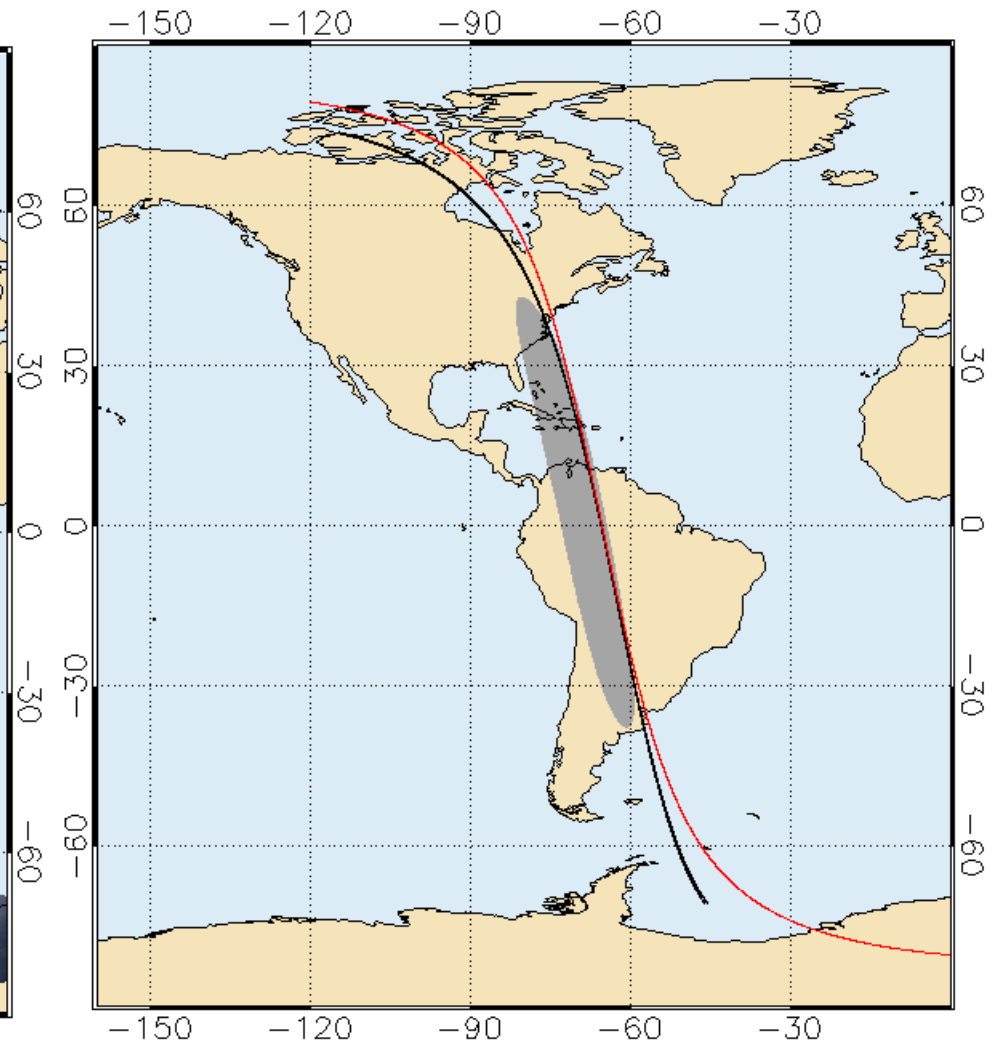




Example: Co-locate MODIS/OCO-2



MODIS/Aqua,
2010-09-24



MODIS/Aqua glint (grey ellipse), OCO
glint swath (black thick line), MODIS/
Aqua nadir (red line), 2010-09-24



Thank you.

Question? Jennifer.C.Wei@nasa.gov